Having thus described the invention, what we claim is:

1. A cap assembly for feeding cooling gas and sealing gas to and collecting cooling gas from a heat exchanger device comprising side walls, a fiber inlet end having an opening in its center, a fiber outlet end having an opening in its center, and connecting means with a opening in its center which is attached to the fiber outlet end, the side walls having mounted therein port means to allow gas to flow through said side walls, said port means comprising a hollow bore extending radially out from the side walls and said cap assembly being generally shaped and sized to be removable from said heat exchange device.

2. The cap assembly as claimed in claim 1 wherein said cap assembly is fabricated from a metal.

3. The cap assembly as claimed in claim 1 wherein said inner side walls are parallel, at a gradient or curved from said fiber inlet end to said fiber outlet end.

4. The cap assembly as claimed in claim 1 wherein said fiber inlet end is flat or curved.

5. The cap assembly as claimed in claim 1 wherein said port means are connected to a pump mechanism.

6. The cap assembly as claimed in claim 1 wherein said port means extend radially from said side walls and are threaded.

7. The cap assembly as claimed in claim 1 wherein said connection means are mounted to the top of said heat exchanger.

8. The assembly cap as claimed in claim 1 wherein said connection means are attached to said heat exchanger.

9. The cap assembly as claimed in claim 1 wherein said fiber inlet end is circular or square.

10. The cap assembly as claimed in claim 1 wherein said cap is divided in halves.

11. The cap as claimed in claim 10 wherein said halves are held together by hinges or pneumatic pistons.

12. The cap as claimed in claim 1 further comprising partitions extending inwardly and dividing said chamber in into two chambers.

13. The cap as claimed in claim 10 comprising two or more partitions.

14. The cap as claimed in claim 10 wherein said partitions have an opening in their center.

15. The cap as claimed in claim 1 wherein said port means is at least two port means.

16. The cap as claimed in claim 15 wherein said port means is at least one port means.

17. A method of cooling a hot drawn fiber in a heat exchange unit comprising a single heat exchanger having one fiber inlet end opening, one fiber outlet end opening, at least one cooling gas inlet, gas pumping means

and a cap assembly having at least one inlet and at least one outlet comprising the steps:

a) drawing said fiber through said heat exchanger;

b) introducing gaseous coolant into said heat exchanger via said at least one cooling gas inlet; and

c) withdrawing a gaseous exhaust stream comprising said gaseous coolant and at least one gaseous impurity from said cap assembly by means of said gas pumping means.

18. The method as claimed in claim 17 wherein said fiber is optical glass fiber.

19. The method as claimed in claim 17 wherein the gaseous coolant introduced in the said heat exchanger comprises helium, nitrogen, carbon dioxide, hydrogen and mixtures thereof.

20. The method as claimed in claim 17 wherein said gaseous exhaust stream is withdrawn from said cap assembly at a rate such that the pressure and at least part of said heat exchanger is maintained between at about 0.7 bara and ambient pressure.

21. The method as claimed in claim 17 wherein the gaseous coolant introduced into said heat exchanger comprises at least 60% helium.

22. The method as claimed in claim 17 wherein said at least one gaseous impurity comprises air.

23. The method as claimed in claim 17 wherein the rate of withdrawal of said gaseous exhaust stream from said heat exchanger through said cap assembly is partially determined by the rate of flow of gaseous coolant into said heat exchanger.

24. The method as claimed in claim 17 wherein said fiber is drawn through said heat exchanger and said gaseous coolant is introduced into said heat exchanger at substantially constant rates.

25. The method as claimed in claim 17 further comprising removing at least part of said at least one gaseous impurity from said gaseous exhaust stream and recycling the impurity depleted gaseous exhaust stream to said heat exchanger as gaseous coolant.

26. The method as claimed in claim 17 wherein the removal of at least part of said at least one gaseous impurity for some gaseous exhaust stream is carried out by a gas purification process selected from the group consisting of pressure swing adsorption, temperature swing adsorption, membrane separation, distillation and combinations of these processes.

27. The method as claimed in claim 26 wherein said gas purification process is a pressure swing adsorption process using a nitrogen and oxygen selective adsorbent.

28. The method as claimed in claim 17 wherein one or more cap assemblies are present on said heat exchanger.

29. The method as claimed in claim 17 wherein a cap assembly is present on both the top of the chamber and bottom of said heat exchanger.

30. The method as claimed in claim 17 wherein at least two cap assemblies are present on said heat exchanger.